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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/776,599	02/01/2001	Kenneth F. Buechler	071949-2404	9314

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EXAMINER

EPPERSON, JON D

ART UNIT PAPER NUMBER

1639

DATE MAILED: 09/02/2003

//

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

P/c Copy

Application No. 09/776,599		Applicant(s) BUECHLER ET AL	
Examiner Jon D Epperson		Art Unit 1639	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 30-46 is/are pending in the application.
- 4a) Of the above claim(s) 32-41, 43, 44 and 46 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 30, 31 and 45 is/are rejected.
- 7) ☒ Claim(s) 42 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☒ Interview Summary (PTO-413) Paper No(s). 1/
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Status of the Application

1. The Response filed June 16, 2003 (Paper No. 10) is acknowledged.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. This application contains claims 32-41, 43-44 and 46 drawn to a nonelected invention(s) and/or species (see Paper No. 9). This was addressed in the previous action. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144). See MPEP § 821.01.

Status of the Claims

4. As an initial matter, the Examiner thanks Applicants for pointing out the previous typographical error (see Paper No. 10, page 6, paragraph 3). Applicants previously elected Group I i.e., claims 30-42 and 42-57. In Paper No. 9, the Examiner withdrew claims 32-41, 43-44 and 46 as being drawn to non-elected species and/or inventions. Therefore, claims 30-31, 42 and 45 were pending. No claims were added, amended or cancelled by Applicants in Paper No. 10. Therefore, claims 30-31, 42 and 45 are still pending and examined on the merits.

Priority Claims

5. As an initial matter the Examiner thanks Applicants for providing the priority diagram,

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which clearly showed the relationships between the present application and the various priority documents including the relationship with 08/620,597. However, the priority date of **March 23, 1995** is still afforded to Applicants because Applicants have not shown where support could be found for silicon phthalocyanine bis(dimethylhexylvinylsilyloxy) in each of the Applications wherein priority is claimed other than U.S. Patent Application 08/409,398 (now U.S. Patent 6,251,687) (Date of Filing is March 23, 1995).

Information Disclosure Statement

6. Applicants argue that according to MPEP § 609(I)(2), the office is obliged to consider any information considered in the parents to the present application, and that such information need not be submitted in the present application. The Examiner's position is that the "copies of the references" do not need to be submitted, but the "PTO-1449 or an equivalent" does need to be submitted with the correct "serial number" for the case (see attached interview summary).

Election/Restriction

7. Applicants continue to argue that the restriction with regard to claims 43-44 should not be withdrawn from consideration. Specifically, Applicants state, "any complete search for independent claim 30 *necessarily* must include a search for dependent claims 43 and 44, which depend from and further limit claim 30. Applicant notes that, because claim 30 is written using open "comprising" language, any prior art embodiment within the scope of dependent claims 43 or 44 is a species of the genus described in claim 30. Therefore, if the Examiner is indicating that such matter will not be searched with regard to claim 30, Applicants respectfully submit that

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such a search will not be a 'thorough search of the prior art' as required by MPEP § 904.02. Because the search for claim 30 must include a search for dependent claims 43 and 44, no serious burden is presented on the Examiner if all claims are searched and examined" (see Paper No. 10, pages 6-7).

As an initial matter, the Examiner notes that the restriction requirement has already been made final and, as a result, Applicants arguments are moot (see Paper No. 9, paragraph 12). However, in order to maintain a complete record the Examiner reiterates here the position previously stated (which are incorporated in their entirety herein by record). As stated in Paper Nos. 7 and 9, these arguments were fully considered but were not found persuasive because Groups II and III have divergent subject matter that would require an additional burdensome search. Specifically, Group II is drawn to an "antibody", which is not required by the method of Group I. Thus Group I and II are classified separately in different classes and subclasses (e.g., Group I is in class 252, subclass 301.13 whereas Group II is in class 424, subclass 178.1). Therefore, art anticipating or rendering obvious Group I would no necessarily anticipate or render obvious Group II, because they are drawn to different invention that have different distinguishing features and/or characteristics. Likewise, Group III is drawn to a "nucleic acid", which is not required by Groups I and/or II and is also classified in different classes and subclasses (e.g., class 536, subclass 23.1).

Therefore, the groups that describe these products have different issues regarding patentability and enablement, and represent patentably distinct subject matter, which merits separate and burdensome searches. Art anticipating or rendering obvious each of the above-identified groups respectively would not necessarily anticipate or render obvious another group,

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because they are drawn to different inventions that have different distinguishing features and/or characteristics.

Furthermore, in response to Applicants assertion that “a search will not be a ‘through search of the prior art’ as required by MPEP § 904.02” because the use of the term “comprising” would render divergent classes and subclasses within the scope of Applicants claims (presumably Applicant could add a “dependent” claim drawn to “any” class/subclass) including, for example, “antibodies” (e.g., 424, subclass 178.1) and “nucleic acids” (e.g., class 536, subclass 23.1) in addition to the currently claimed compounds (e.g., class 252, subclass 301.13), the Examiner contends that “comprising” does not afford Applicants such a search. This would lead to the impossible conclusion that the Examiner must search an infinite amount of divergent material in order to provide Applicant with a “through search” i.e., the Examiner must search all classes and subclasses because presumably “all” classes and subclasses fall within the scope of Applicants’ “comprising” language. This would be truly burdensome and, as a result, the Examiner contends that this argument is without merit.

Withdrawn Objections/Rejections

8. The objection to the oath is withdrawn in view of Applicants arguments. The Buechler et al rejection under 35 U.S.C. § 102(e) is withdrawn in view of Applicants’ arguments. All other rejections are maintained and the arguments are addressed below.

Outstanding Objections and/or Rejections

Claim Rejections - 35 USC § 103

9. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sounik et al (EPO 0391284 A1) (Date of Publication is **October 10, 1990**) and Wheeler et al (Wheeler, B. L.; Nagasubramanian, G.; Bard, A. J.; Schechtman, L. A.; Dininny, D. R.; Kenney, M. E. "A Silicon Phthalocyanine and a Silicon Naphthalocyanine: Synthesis, Electrochemistry, and Eletrogenerated Chemiluminescence" *J. Am. Chem. Soc.* **1984**, *106*, 7404-7410).

For *claim 30*, Sounik et al (see entire document) teaches particles that comprise mixtures of substituted and/or unsubstituted phthalocyanine, naphthalocyanine and anthracyanine structures wherein the metal can be silica (see Sounik et al, page, 2, last paragraph; see also claims, especially claims 1-5 and 9).

The Examiner further contends that the particles disclosed in Sounik et al (e.g., see page 2, last paragraph) would be "fluorescent" because they disclose particles with the same mixture of compounds (i.e., that have the same structures) as that disclosed by Applicants. The Examiner notes that where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). "When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not." *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). See

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MPEP § 2112.01. Here, Sounik et al claims the same mixture of compounds to form the same particles as Applicants.

The prior art teachings of Sounik et al differ from the claimed invention as follows:

For *claim 30*, Sounik et al is deficient in that it does not specifically teach the use of either “dimethylhexylvinylsilyloxiide” or “trihexylsilyloxiide” as the ligands to the Silicon metal (although the reference does refer to “trihexylsilyloxiide” when it cites the Wheeler et al reference, see page 2, line 22). Sounik teaches that the ligands to the metal can be “hydrogen, halogen or an aliphatic, alicyclic or aromatic substituent containing 1-12 carbon atoms”, which would encompass Applicants’ ligands (i.e., Sounik et al teaches a genus that would encompass Applicants’ species); however, Sounik et al does not explicitly teach the use of Applicants’ elected species (it only refers to Applicants’ elected species in the “Background of the Invention” section, see Sounik et al, page 2, line 22).

However, Wheeler et al teaches the following limitations that are deficient in Sounik et al:

For *claim 30*, Wheeler et al (see entire document) teaches the use of a “trihexylsilyloxiide” as a ligand for both silicon phthalocyanine and silicon naphthalocyanine (see Wheeler et al, abstract; see also page 7404, paragraph 1; see also figure 1). Please note that Wheeler et al also discloses that these compounds are “fluorescent” (see Wheeler et al, page 7409, “Absorption and Fluorescence” section; see also Figure 8 wherein the fluorescence spectrum for $\text{SiPc}[\text{OSi}(\text{n-C}_6\text{H}_{13})_3]_2$ is presented).

It would have been obvious to one skilled in the art at the time the invention was made to make a particle of mixed silicon phthalocyanine, naphthalocyanine and/or anthracyanine dyes as taught by Sounik et al with the silicon phthalocyanine bis(trihexylsilyloxy) and silicon naphthalocyanine bis(trihexylsilyloxy) compounds as disclosed by Wheeler et al because the compounds disclosed by Wheeler et al would fall within the genus of compounds that are claimed by Sounik et al (see Sounik et al, claim 9 stating that the ligand is “hydrogen, halogen or an aliphatic, alicyclic or aromatic substituent containing 1-12 carbon atoms”, which would encompass the “trihexylsilyloxy” ligands disclosed by Wheeler et al i.e., six carbons is within 1-12 carbons) i.e., references represent “analogous art” as required by MPEP § MPEP § 2141.01(a). Furthermore, the references must represent “analogous art” because Sounik et al explicitly cites the Wheeler et al article in the background of the invention.

Furthermore, one of ordinary skill in the art would have been motivated to use the silicon phthalocyanine bis(trihexylsilyloxy) and silicon naphthalocyanine bis(trihexylsilyloxy) compounds as taught by Wheeler et al because according to Wheeler et al “[t]he presence of the trialkylsiloxy groups on the central Si atom leads to relatively high solubility in these compounds and permits studies of solutions of them at the millimolar level” (see Wheeler et al, sentence bridging pages 7404-7405; see also page 7406, column 2, paragraph 3, “it is clear that the solubility ... of ... $\text{SiNc}[\text{OSi}(\text{n-C}_6\text{H}_{13})_3]_2$ are directly associated with the size and nature of their axial ligands”). The Examiner contends that higher solubility of the bis(tri-n-hexylsiloxy)(2,3-phthalocyaninato)silicon disclosed by Wheeler et al would motivate a person of skill in

the art to use this compound in the invention of Sounik et al because Sounik et al requires that these mixtures be "soluble" in a wide range of solvents to allow form them to be "sprayed" onto a surface to form the thin films. If the mixtures were insoluble they could be "sprayed" onto the surface to form the thin films. Please note that "there is no requirement that the prior art provide the same reason as the applicant to make the claimed invention", see MPEP § 2144").

Furthermore, a person of skill in the art would have been motivated to combine the references because Wheeler et al shows that the compounds are "stable" and exhibit favorable optical properties that are required by the tetrazaporphin "dye" mixture of Sounik et al (see Wheeler et al, page 7409, "Absorption and Fluorescence" section; see also conclusion; see also page 7405, column 2, paragraphs 6 and 9; see also page 7408, column 2, last paragraph; see also page 7410, column 1, last paragraph; see especially page 7406, "Chemical and Physical Properties" section, "The chemical stability of the SiNc system is illustrated by ...").

Furthermore, one of ordinary skill in the art would have reasonably expected to be successful because Wheeler et al further shows states that the compounds "show high thermal and chemical stability and interesting optical ... properties (see Wheeler et al, page 7404, paragraph 1) and also show "intense absorption around 650-700 nm for SiPc(OR)₂, 600-650 nm for RO(SiPcO)₂R, and 750-800 nm for SiNc(OR)₂", which corresponds to the range of absorption required by Sounik et al (see Sounik et al, page 3, lines 15-16, "[i]n another embodiment ... a mixture of tetrazaporphin dye constituents ... exhibit light absorption over a spectrum range of about 660-860 nm").

Response

10. Applicant's arguments directed to the above 35 U.S.C. § 103(a) rejection were considered (and are incorporated in their entirety herein by reference) but were not deemed persuasive for the following reasons. Please note that the above rejection has been modified from its original version to more clearly address applicants' newly amended and/or added claims and/or arguments.

Applicants argue [1] that there is not motivation to combine. For example, Applicants argue that "the Examiner cannot simply place one of the individual molecules allegedly disclosed by the Wheeler et al. publication into a particle; instead, the Examiner must provide a motivation to place each of the molecules disclosed by the Wheeler et al. publication in a single fluorescent particle in order to provide the instantly claimed invention" (see Paper No. 10, page 8, paragraph 2; see also page 9, second paragraph), [2] every element of the invention is not taught by the combination of the references. For example, Applicants argue that Sounik et al does not disclose any "particles, fluorescent or otherwise" (see Paper No. 10, page 8, paragraph 2), [3] the Examiner's "species-genus" motivation (i.e., see Paper No. 10, page 10, paragraph 2, "because the compounds disclosed by Wheeler et al would fall within the genus of compounds that are claimed by Sounik et al") is not dispositive of a motivation to combine or modify reference, [4] there are too many "variables" for a person of skill in the art to figure out (see Paper No. 10, pages 10-11), [5] higher solubility would not be a good motivating factor because the Examiner has not provided any "indication as to why this would motivate the skilled artisan to combine the publications" (see page 11, paragraph 2), [6] Wheeler et al uses the phrases

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“permit studies” which is an indication that the properties of the trialkylsiloxy groups are not well established, [7] the general guidance of the references represents merely an “obvious to try” rationale that cannot support an obviousness rejection under MPEP § 2145(X)(B) (see page 11, paragraph 2), [8] the word “often” is equivocal because it indicates that “not all molecules of this class exhibit such properties” and thus there would be no reasonable expectation of success and moreover this statement says “nothing about the particular molecules disclosed in the Wheeler et al. publication, on which the Examiner relies” (see paragraph bridging pages 11-12), [9] “there is nothing in either publication cited by the Examiner indicating that the molecules disclosed in the primary Sounik et al. publication have similar properties to those disclosed in the secondary Wheeler et al. publication ... Use of the compounds disclosed by the Wheeler et al. publication as a mixture would render the mixture unsatisfactory for the purposes intended by the Sounik et al. publication ... Thus, no motivation for the asserted combination of references can be found in any common light absorption characteristics shared by the Wheeler et al. and Sounik et al. publications. See, e.g., MPEP 2143.01 (the proposed modification cannot render the prior art unsatisfactory for its intended purpose)” (see page 12, paragraph 2), [10] “there is nothing in either publication ... indicating that the molecules disclosed in the primary Sounik et al. publication have similar uses to those disclosed in the secondary Wheeler et al. publication ... Thus motivation for the asserted combination of references cannot be found in any common uses shared by the Wheeler et al. and Sounik et al. publications” (see pages 12-13), [11] the rejection is based on hindsight (see page 13, paragraph 3), [12] the claimed compounds unexpectedly exhibit fluorescence energy transfer and reduced quenching when used in particles which overcomes any prima facie case of obviousness that may have been established by the Examiner.

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Specifically, when the dye pairs are included in a single particle fluorescence energy transfer ("FET") occurs between the members of the dye pair. Furthermore, the possibility that such molecules might exhibit FET when provided in a particle is not disclosed or even suggested by any publication of record. In addition, the use of axial ligands such as bis(dimethylhexylvinylsiloxide) can dramatically reduce this quenching which again is not disclosed by the publications of record (see pages 13-14).

This is not found persuasive for the following reasons:

The Examiner contends the following:

[1] In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d1071, 5 USPQ2d1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d347, 21 USPQ2d1941 (Fed. Cir. 1992). In this case, the Examiner contends that there is motivation to combine these references as set forth by the original rejection (see above). Furthermore, the Examiner argues that "motivation" does not have to be provided for "each" molecule as Applicants contend because "there is no requirement that the prior art provide the same reason as the applicant to make the claimed invention", see MPEP § 2144".

[2] In response to applicants' arguments against the Sounik et al reference individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d413, 208 USPQ871 (CCPA

1981); *In re Merck & Co.*, 800 F.2d1091, 231 USPQ375 (Fed. Cir. 1986). Here, the combined teachings of Sounik et al and Wheeler et al do teach “particles, fluorescent or otherwise” as set forth in the original rejection (e.g., see Wheeler et al, page 7409, “Absorption and Fluorescence” section; see also Figure 8 wherein the fluorescence spectrum for $\text{SiPc}[\text{OSi}(\text{n-C}_6\text{H}_{13})_3]_2$ is presented). However, *assuming arugendo* that the combined teachings of Sounik et al and Wheeler et al did not explicitly teach fluorescence, the Examiner argues that this would be an inherent property of the compounds because they have the same structures as set forth by Applicants (see newly amended rejection above).

[3] The Examiner is not contending that the “species-genus” is a “motivation.” The Examiner is simply stating that the art is “analogous” i.e., the species disclosed by Wheeler et al falls entirely within the scope of the genus disclosed by Sounik et al in accordance with MPEP § 2141.01(a). Furthermore, Sounik et al explicitly references the Wheeler et al publication in the “Background” section (see page 2, line 21).

[4] The Examiner contends that there is only “one” variable to figure out i.e., the size of the ligand to the silicon metal, which is taught by the combination of references (see original rejection, “Sounik et al is deficient in that it does not specifically teach the use of either “dimethylhexylvinylsilyloxiide” or “trihexylsilyloxiide” as the ligands to the Silicon metal ... Wheeler et al (see entire document) teaches the use of a “trihexylsilyloxiide” as a ligand for both silicon phthalocyanine and silicon naphthalocyanine”). Here, Applicants disclose a mixture of silicon phthalocyanine, naphthalocyanine or anthranylocyanenine. Sounik et al discloses a mixture of the exact same compounds as those disclosed by Applicants with the only difference between the exemplified compounds of the reference and the compounds disclosed by

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Applicants is the ligand to the silicon metal (see Sounik et al, Examples 1-2 disclosing mixtures of the exact same compounds with the exception that the silicon ligand is "octadecyl" instead of the required "hexyl"). Applicants disclose a genus wherein the ligand can be between 1-12 carbons. Although the 6 carbon atom derivative was never explicitly cited by Sounik et al other than in the background of the invention (see page 2, line 22), it is conceivable that this derivative would be "at once envisaged" from the generic chemical formula disclosed by Sounik et al because there are only "twelve" possibilities. Furthermore, the species with six carbon atoms is cited in the Background section (see page 2, line 22 disclosing Applicants' bis(tri-n-hexylsiloxy)(2,3-phthalocyaninato)silicon and its dimer), which would help a person of skill in the art to "at once envision" Applicants' claimed compounds from the generic formula provided by Sounik et al.

[5] The Examiner contends that higher solubility of the bis(tri-n-hexylsiloxy)(2,3-phthalocyaninato)silicon disclosed by Wheeler et al would motivate a person of skill in the art to use this compound in the invention of Sounik et al because Sounik et al requires that these mixtures be "soluble" in a wide range of solvents to allow form them to be "sprayed" onto a surface to form the thin films. If the mixtures were insoluble they could be "sprayed" onto the surface to form the thin films. Please note that "there is no requirement that the prior art provide the same reason as the applicant to make the claimed invention", see MPEP § 2144").

[6] The Examiner contends that Applicants are merely making an unsubstantiated statement that the reference is not enabled. Applicants provide no data or sound scientific reasoning to conclude that the Wheeler reference is not enabled. Furthermore, the reference could reasonably be interpreted as "establishing" the properties of the trialkylsiloxy groups

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because if they weren't then these studies would "not" be "permitted" (i.e., the exact opposite of Applicants' interpretation). Furthermore, the trialkylsiloxy groups are also presented in Sounik et al, which is presumed to be enabled (i.e., "established") because it is a patent and patents are presumed to be enabled.

[7] The Examiner contends that the reference provides "specific" guidance i.e., discloses Applicants' elected species (see Paper No. 9, paragraph 5) and thus Applicants arguments are moot. Furthermore, Applicant's "obvious to try" argument is not persuasive since the rejection provides ample motivation to combine the above Wheeler et al and Sounik et al references (e.g., see section [5] above and the original rejection).

[8] The Examiner contends that the Wheeler et al reference only needs to show a "reasonable" expectation of success, not an "absolute" expectation as purported by Applicants. Thus, the fact that the word "often" leaves open the possibility that some of the phthalocyanine compounds might not show the high thermal and chemical stability is of no consequence because the word "often" also leaves open the possibility that they will show the desired properties. Furthermore, the word "often" indicates that it is "more likely than not" that these properties will be found and thus it does provide a "reasonable" expectation of success.

[9] The Examiner contends that the compounds disclosed by Sounik et al and Wheeler et al would have the same properties because they disclose the SAME COMPOUNDS (e.g., compare Wheeler et al, first line of abstract, to Sounik et al, page 2, line 22 or claim 9 wherein X is six and the other substituents are as in Examples 1 and 2). Consequently, Applicants arguments are moot.

[10] The Examiner contends that the compounds do not have to have "similar uses" as

purported by Applicants. Please note that “there is no requirement that the prior art provide the same reason as the applicant to make the claimed invention”, see MPEP § 2144”). However, even *assuming arguendo* that they did have to have “similar uses” the Examiner contends that they do. The compounds have identical structures (see [9] above) and thus have identical uses. Wheeler et al discloses a species that falls within the genus disclosed by Sounik et al (see above rejection). Consequently, Applicants arguments are moot.

[11] In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ209 (CCPA 1971).

[12] As an initial matter, the Examiner notes that Applicants' arguments are not commensurate in scope with Applicants claims. Applicants argue that the claimed compounds “unexpectedly” exhibit fluorescence energy transfer (“FET”)) between the members of the dye pair and “axial ligand quenching.” The Examiner notes that Applicants arguments are not limited to FET or axial ligand quenching (e.g., the term “fluorescent particle” encompasses more than just FED or axial ligand quenching (see claim 30)).

Furthermore, in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., fluorescence energy transfer and quenching) is not recited in the rejected claim(s). Although the

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claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d1181, 26 USPQ2d1057 (Fed. Cir. 1993).

Furthermore, the Examiner argues that the FET and axial ligand quenching would be “inherent” properties of these compounds and not “unexpected” properties as Applicants contends.

Accordingly, the 35 U.S.C. § 103(a) rejection cited above is hereby maintained.

11. Claims 30-31 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wheeler et al (Wheeler, B. L.; Nagasubramanian, G.; Bard, A. J.; Schechtman, L. A.; Dininny, D. R.; Kenney, M. E. “A Silicon Phthalocyanine and a Silicon Naphthalocyanine: Synthesis, Electrochemistry, and Eletrogenerated Chemiluminescence” *J. Am. Chem. Soc.* **1984**, *106*, 7404-7410) and Sounik et al (EPO 0391284 A1) (Date of Publication is **October 10, 1990**) and Vener et al (Vener, T. I.; Turchinskii, M. F.; Knorre, V. D.; Lukin, Y. V.; Shcherbo, S. N.; Zubov, V. P.; Sverdlov, E. D. “A novel approach to nonradioactive hybridization assay of nucleic acids sing stained latex particles” *Analytical Biochemistry* **1991**, *198*(2), 308-311).

For *claim 30*, the combined teachings of Wheeler et al and Sounik et al teach all the limitations stated in the 35 U.S.C. 103(a) rejection above (incorporated in its entirety herein by reference), which renders obvious claim 30.

The combined prior art teachings of Wheeler et al and Sounik et al differ from the claimed invention as follows:

For *claims 31 and 45*, the combined prior art teachings of Wheeler et al and Sounik et al differ from the claimed invention by not specifically reciting the use of a

“latex” particle that are “between 0.1 nm and 5000 nm”.

However, Vener et al teaches the following limitations that are deficient in Sounik et al and Wheeler et al:

For *claim 31 and 45*, Vener et al (see entire document) teaches that polyacrolein “latex particles” can be used to encapsulate dyes wherein the particle size falls between 0.1 nm and 5000 nm i.e., 1.8 μm (see Vener et al, Materials and Methods Section, especially page 308, last paragraph; see also figure 1 and page 311, column 1, paragraph 2).

It would have been obvious to one skilled in the art at the time the invention was made to combine the references of Sounik et al and Wheeler et al with Vener et al because Vener et al requires the incorporation of a “dye” in “latex particles” for their hybridization assay and the combined teachings of Sounik et al and Wheeler et al put for dyes that are “stable” and have favorable spectroscopic and solubility properties. Furthermore, one of ordinary skill in the art would have been motivated to use the “dyes” disclosed by the combined teachings of Sounik et al and Wheeler et al with the “latex particles” of Vener et al because the combined teachings of Sounik et al and Wheeler et al teach that these dyes are stable and possess favorable fluorescent properties (see 35 U.S.C. § 103(a) rejection, above). Furthermore, the combined teachings of Sounik et al and Wheeler et al teach that the “dye mixture can be formed in a homogenous blend with a polymer” and since latex disclosed by Vener et al is a “polymer” a person of skill in the art would have been motivated to combined these references. Furthermore, one of ordinary skill in the art would have reasonably expected to be successful because the

combined teachings of Sounik et al and Wheeler et al teaches that their “phthalocyanine dyes” can be combined with polymers such that would be used to make latex (see Sounik et al, page 2, lines 48-51).

Response

12. Applicant's arguments directed to the above 35 U.S.C. § 103(a) rejection were considered (and are incorporated in their entirety herein by reference) but were not deemed persuasive for the following reasons. Please note that the above rejection has been modified from its original version to more clearly address applicants' newly amended and/or added claims and/or arguments.

Applicant argues [1] that the Sounik et al and Wheeler et al publications were discussed in detail above, which presumably are equally applicable here (see Paper No. 10, page 15, paragraph 1), [2] there is no motivation to combine the cited references because they do not teach the molecules to be “highly water soluble” (see page 15, paragraph 2). Furthermore, even if water solubility was a motivating factor the Examiner has not indicated “any relationship” between water solubility and the use of dyes in latex particles, [3] there is no motivation to combine because the cited references do not show that the dyes are “stable and possess favorable fluorescent properties” as the Examiner contends (see page 15, paragraph 3), [4] there is no motivation to combine because the cited references do not teach that their ‘phthalocyanine dyes’ can be combined with polymers such that would be used to make latex (see page 15, last paragraph), [5] the unexpected results would overcome any prima facie case made by the Examiner (see page 16, paragraph 2).

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This is not found persuasive for the following reasons:

[1,5] The Examiner contends that any arguments directed to the Sounik et al and Wheeler et al rejection under 35 U.S.C. § 103(a) above (which is incorporated in its entirety herein by reference) are equally applicable to the extent that Applicants repeat those rejections here.

[2-3] The Examiner contends that there is motivation to combine the references as stated in the original rejection (see rejection above) also includes the fact that the compounds would be stable and exhibit favorable optical properties. Consequently, it does not matter whether the compounds are water-soluble or not and does not need to indicate a relationship to water solubility. Furthermore, the combined references do teach that the compounds were stable and possessed favorable optical properties see Wheeler et al, page 7409, "Absorption and Fluorescence" section; see also conclusion; see also page 7405, column 2, paragraphs 6 and 9; see also page 7408, column 2, last paragraph; see also page 7410, column 1, last paragraph; see especially page 7406, "Chemical and Physical Properties" section, "The chemical stability of the SiNc system is illustrated by ...").

[4] The Examiner contends that the combined teachings of the combined teachings of Sounik et al and Wheeler et al teach that the "dye mixture can be formed in a homogenous blend with a polymer" and since latex disclosed by Vener et al is a "polymer" a person of skill in the art would have been motivated to combined these references. Furthermore, a person of skill would have been motivated to combine the references because of the stability of the compounds and their favorable spectroscopic properties as noted above (see [2-3]).

Accordingly, the 35 U.S.C. § 103(a) rejection cited above is hereby maintained.

Double Patenting

13. Claims 30-31, 42 and 45 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-136 of U.S. Patent No. 6,251,687 (especially claim 104). An obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but an examined application claim not is patentably distinct from the reference claim(s) because the examined claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1986). Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 30-31, 42 and 45 are generic to all that is recited in claim 104 of U.S. Patent No. 6,251,687. That is, claim 104 of U.S. Patent No. 6,251,687 falls entirely within the scope of claims 30-31, 42 and 45 or, in other words, claims 30-31, 42 and 45 are anticipated by claim 104 of U.S. Patent No. 6,251,687. First, claim 104 of '687 discloses silicon phthalocyanine bis(dimethylhexylvinylsilyloxy) and silicon[di(1,6-diphenylnaphthalocyanine)]diphthalocyanine bis(dimethylhexylvinylsilyloxy) (note claim 104 recites claim 100 using the "or" phraseology), which falls entirely within the scope of claims 30-31, 42 and 45 because these two compounds are recited in claims 30-31, 42 and 45 or depend on claims that recite these two compounds. Second, claim 104 of '687 recites the use of a latex particle, which falls entirely within the scope of claims 30-31, 42 and 45 because claims 30-31, 42 and 45 either explicitly recite the use of latex (i.e., claim 31) or use "comprising" terminology that would include latex. Finally, claim 104 of '687 also falls entirely

within the scope of claim 45 because the specification defines the claimed particles as having a “[p]referred particle sizes range from about 0.1 nm to 5000 nm” (see U.S. Patent No. 6,251,687, specification, “Incorporation of Dyes into Particles” Section, second paragraph). Please note that that “those portions of the specification which provide support for the patent claims may also be examined and considered when addressing the issue of whether a claim in the application defines an obvious variation of an invention claimed in the patent” (MPEP § 804).

Response

14. Applicant’s arguments directed to the above double patenting rejection were fully considered but were not deemed persuasive for the following reasons. Please note that the above rejection has been modified from its original version to more clearly address applicants’ newly amended and/or added claims and/or arguments.

Applicant argues that “Applicants acknowledge the obviousness-type double patenting rejection of claims 30-31, 42 and 45. Should the claims be found allowable as presently written, a terminal disclaimer will be submitted” (see Paper No. 10, page 16, last paragraph).

This is not found persuasive for the following reasons:

The Examiner contends that Applicants have “acknowledged” their duty to submit a terminal disclaimer, but have not done so and, as a result, the double patenting rejection is hereby maintained.

Conclusion

Applicant's amendment necessitated any new ground(s) of rejection presented in this

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Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP §706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jon D. Epperson, Ph.D. whose telephone number is (703) 308-2423. The examiner can normally be reached on Monday-Thursday from 9:30 to 7:00 and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Wang, can be reached on (703) 306-3217. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-4242. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.

Jon D. Epperson, Ph.D.
August 26, 2003

BENNETT CELSA
PRIMARY EXAMINER

